

Roger J. Murphy, Jr.
President and
Chief Operating Officer



April 10, 1995

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

BY HAND DELIVERY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

**Re: Petition for Rulemaking by Symbol
Technologies, Inc.; Amendment of
Section 15.247(a)(1)(ii) of the Commission's
Rules on Spread Spectrum Operation, RM 8608.**

Dear Mr. Caton:

Aironet Wireless Communications, Inc. ("Aironet"), a subsidiary of Telxon, is a manufacturer of Part 15 spread spectrum devices. Aironet opposes the referenced petition because (1) the proposal to amend Section 15.247 of the Commission's rules will lead to potentially serious interference with other spread spectrum users and primary users of the frequency spectrum; (2) the development of wireless local area networks ("LANs") is not dependent upon changes in the Commission's frequency hopping regulations, but will experience robust growth using spread spectrum systems that comply with the Commission's rules and do not cause potentially harmful interference; (3) there is sufficient spectrum allocated to accommodate frequency hopping systems that comply with the current rules; and (4) the proposed rule is fundamentally at odds with principles underlying Part 15 usage. 1/

Sections 15.247(a)(1)(i) and (ii) of the rules provide that frequency hopping spread spectrum systems operating in the 902-928, 2400-2483.5 and 5725-5850 MHz bands shall use at least 75 hopping frequencies, with maximum 20 dB bandwidth of the hopping channel at 1 MHz and the average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period. Symbol Technologies, Inc. ("Petitioner") proposes an amendment to Section 15.247 of the rules that would also permit spread spectrum

1/ Aironet respectfully requests that the Commission accept these late-filed comments. All known participants in this proceeding have been served with this pleading. Aironet does not believe that any party will be prejudiced by grant of this request.

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24

Mr. William F. Caton
April 10, 1995
Page 2

frequency hopping systems that "may use at least 15 hopping frequencies" but with the same time constraint of 0.4 seconds per 30 second period. 2/

Symbol's proposal would inherently permit wider band transmissions on each of the 15 hopping channels. This use of wider bandwidth transmissions will significantly reduce the processing gain and interference rejection capabilities of frequency hopping spread spectrum systems, leading to potentially serious interference to other frequency hopping spread spectrum systems that comply with the existing rule, direct sequence spread spectrum systems, other Part 15 users and primary users of the band. Petitioner itself admits in its petition that the possibility for interference is real and provides no supportable basis for its conclusion that interference will not be significant. 3/

The proposed amendment, read literally, means that an operator of the proposed wideband frequency hopping would use the 15 hopping frequencies in only six seconds out of any 30 second period (15 frequency hops X 0.4 seconds). If this is Petitioner's true intent, the utility of the service would be extremely limited. Petitioner appears to base its conclusion that its proposal will not change frequency overlaps from those expressed under the current rules on this extremely limited usage. If the real intent of the proposed amendment is to allow five times the bandwidth per channel with the same average hop rate as with 75 channel hopping, then the channels will be repeated five times as often, creating the potential for serious interference. The proposal requires clarification both with respect to its intended meaning and the interference potential.

Symbol argues that the amendment is necessary to fulfill the growing public demand for wireless LANs. Petitioner cites the development of the IEEE 802.11 standard that will govern such wireless LANs. Aironet agrees that there will be substantial demand for wireless LANs. However, there is no need for the Commission to change its rules in order for that demand to be met, especially considering the interference potential inherent to Symbol's proposal. Wireless LANs can be and are provided using spread spectrum systems that comply with the Commission's rules. High-capacity systems use direct sequence spread spectrum and other technologies. There is no reason for the Commission to risk interference problems in order to accommodate the use of frequency hopping for such high-capacity systems when other advanced technologies are more than sufficient to meet the technical requirements. Aironet does not believe that the proposed wideband frequency hopping should be excluded as an alternative. However, there are other frequency bands that are more suitable for technologies with such interference potential.

2/ Symbol Technologies, Inc. Petition for Rulemaking. Amendment of Section 15.247(a)(1)(ii) of the Commission's Rules on Spread Spectrum Operations, filed December 6, 1994 ("Petition").

3/ Petition at 2.

Mr. William F. Caton
April 10, 1995
Page 3

Petitioner states that amending the rules to accommodate wideband hopping on fewer channels is necessary because the frequency band 2402 to 2417 MHz may be reallocated in Docket No. 94-32 to prohibit spread spectrum usage. The Commission recently ruled that the band would not be reallocated and the availability of that band for spread spectrum usage continues. Thus, there is no restriction on the availability of frequency spectrum that would justify the proposed amendment.

Symbol compares its proposal to certain newly-adopted European standards which would permit the wideband frequency hopping under certain circumstances. It should be noted, however, that these standards came into force after considerable controversy in November 1994, and very few, if any, of such frequency hopping systems have been deployed in Europe to date. Even with the adoption of the standard, deployment of frequency hopping systems has been delayed because of continuing controversy within the industry. The Commission should at least wait until it can review the actual experience with these devices in Europe in order to determine the extent to which harmful interference will occur.

In closing, the Commission should recognize that the proposed amendment fundamentally redefines the nature of spread spectrum by allowing the use of wider bandwidth transmissions and reducing the processing gain and interference rejection capabilities. The proposal contravenes the primary objective of spread spectrum, which is to allow use of the technology on a non-interfering basis. In that sense, it undermines the principle behind Part 15 itself -- that unlicensed usage of low power technologies may be employed where it has been demonstrated that the public will be protected from interference.

Respectfully submitted,

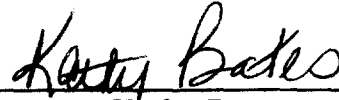
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CERTIFICATE OF SERVICE

I, Kathy Bates, do hereby certify that on this 10th day of April, 1995, a copy of Comments of Aironet Wireless Communications, Inc. was mailed by U.S. first class mail, postage prepaid, to the parties listed below.



Kathy Bates

Dated: April 10, 1995

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